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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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WELSH & KATZ, LTD 120 S RIVERSIDE PLAZA 22ND FLOOR CHICAGO, IL 60606			PERILLA, JASON M	
			ART UNIT	PAPER NUMBER
			2638	

DATE MAILED: 07/21/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/057,430

Applicant(s)

ELTAWIL ET AL.

Examiner

Jason M. Perilla

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 January 2002.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-37 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-13, 15-20 and 22-37 is/are rejected.
- 7) ☒ Claim(s) 14 and 21 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 January 2002 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>3/15/02</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Claims 1-37 are pending in the instant application.

Information Disclosure Statement

2. The information disclosure statement (IDS) submitted on March 15, 2002 is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

Drawings

3. Figure 1 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g).
4. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the "timing selection circuit" of claim 16 and the "timing selection circuit within a processing unit" of claim 21 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate

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changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

5. Claims 1-27 and 30-37 are objected to because of the following informalities:

Regarding claim 1, in line 2, "incorporating a receiver section" should be stricken, and, in line 10, "the processing units" should be replaced by --the plurality of processing units--.

Regarding claim 2, in line 2, "the processing units" should be replaced by --the plurality of processing units--, and, in lines 2-3, "the processing units" should be replaced by --the plurality of processing units--.

Regarding claim 4, in line 1, "the processing units" should be replaced by --the plurality of processing units--.

Regarding claim 5, in line 2, "a processing unit" should be replaced by --each of the plurality of processing units--, and, in line 4, "within a powered processing unit" should be replaced by --within powered processing units of the plurality of processing units--.

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Regarding claim 6, in line 2, "the processing units" should be replaced by --the plurality of processing units--, in line 3, "within the processing units" should be replaced by --within each of the plurality of processing units-- and "the processing units" should be replaced by --the plurality of processing units--, and, in line 4, "within the processing units" should be replaced by --within each of the plurality of processing units--.

Regarding claim 8, in line 4, "within powered processing units is powered" should be replaced by --within powered processing units of the plurality of processing units is powered--.

Regarding claim 10, in line 1, "the processing units" should be replaced by --the plurality of processing units--.

Regarding claim 12, in line 1, "the processing units" should be replaced by --the plurality of processing units--.

Regarding claim 14, in lines 1-2, "the multipath components" is lacking antecedent basis and may be replaced by --the received multipath signals--, and, in lines 2-3, "the configuration of the processing units" should be replaced by --a configuration of a corresponding one of the plurality of processing units--.

Regarding claim 15, in line 1, "the processing units" should be replaced by --the plurality of processing units--.

Regarding claim 21, in line 2, "within a processing unit" should be replaced by --within a one of the plurality of processing units-- or alternative definite language.

Regarding claim 22, in line 6, "the processing units" should be replaced by --the plurality of processing units--.

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Regarding claim 23, in line 2, "the processing units" should be replaced by --the plurality of processing units--.

Regarding claim 30, in line 2, "incorporating a receiver section" should be stricken, in line 2, "the processing units configurable" should be replaced by --the plurality of processing units each configurable--, in line 11, "oversampled first data rate" should be replaced by --oversampled data rate--, in line 14, "in a plurality" should be replaced by --by a plurality--, and, in line 15, "the signals" should be replaced by --the received signals--.

Regarding claims 33-35, in line 2 of each claim, "a chip rate for" should be replaced by --a rate of--.

Regarding claim 36, in line 2, "incorporating a receiver section" should be stricken, in line 3, "the processing units configurable" should be replaced by --the plurality of processing units each configurable--, and, in line 12, "oversampled first data rate" should be replaced by --oversampled data rate--.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 1, 2, 4, 6, 7, 10-13, 15, and 26 are rejected under 35 U.S.C. 102(e) as being anticipated by Subrahmanya et al (US 2003/0128678; hereafter "Subrahmanya").

Regarding claim 1, Subrahmanya discloses a receiver section for a spread spectrum communication system (para. 0004) incorporating a receiver section (fig. 1, ref. 106), the receiver section comprising: a plurality of processing units (fig. 4, refs. 410a-410n), the processing units configurable to provide a plurality of correlation functions (fig. 4, refs. 424a, 424b); a signal acquisition section (fig. 4, ref. 152), the signal acquisition section coupled to receive analog communication signals via the antenna (fig. 4, ref. 150), the signal acquisition section outputting sampled signals corresponding to a plurality of multipath components (fig. 4, ref. $S(t)$; paras. 0028, 0039), the plurality of processing units receiving data signals and performing correlation functions on the data signals (para. 0043, ref. 424a); a controller (fig. 4, ref. 160), coupled to the processing units over a control signal path, the controller outputting configuration information to the plurality of processing units to configure the plurality of processing units (para. 0040).

Regarding claim 2, Subrahmanya discloses the limitations of claim 1 as applied above. Subrahmanya discloses that the controller outputs configuration information to the plurality of processing units over the control bus to determine which multipath signal they are tracking (i.e. the configuration of the processing unit) (para. 0040).

Subrahmanya does not explicitly disclose that the processing units maintain the particular configuration until the controller outputs a new set of configuration information. However, it is at least implied that the processing units or fingers would maintain the latest configuration according to the most recent configuration information until they are updated by new configuration information by the controller because the

controller (fig. 4, ref. 160) is the only means by which the processing units (fig. 4, refs. 410a-410n) obtain their configuration (para. 0040).

Regarding claim 4, Subrahmanya discloses the limitations of claim 1 as applied above. Further, Subrahmanya discloses that the processing units each comprise a plurality of configurable correlator resources (fig. 4, refs. 424a, 424b; paras. 0043, 0044), the plurality of configurable correlator resources configurable in response to the configuration information (para. 0040).

Regarding claim 6, Subrahmanya discloses the limitations of claim 4 as applied above. Further, Subrahmanya discloses the additional limitations of claim 6 as applied to claim 2 above.

Regarding claim 7, Subrahmanya discloses the limitations of claim 6 as applied above. Further, as broadly as claimed, the configuration information is interpreted to be in the form of a configuration word because it is in reference to a set of criteria (para. 0040).

Regarding claim 10, Subrahmanya disclose the limitations of claim 1 as applied above. Further, Subrahmanya discloses that the processing units each comprise a plurality of configurable correlator resources (fig. 4, refs. 410a, 410n), the plurality of configurable correlator resources configurable in response to the configuration information (para. 0040) to assume a function selected from the group of early/late timing correlator, pilot correlator (para. 0044), and data channel correlator (0043).

Regarding claim 11, Subrahmanya discloses the limitations of claim 10 as applied above. Further, Subrahmanya discloses that the controller (fig. 4, ref. 160)

generates configuration information in response to a change in received multipath signals (fig. 4, ref. 412; para. 0040). The searcher, as understood by one having skill in the art, follows changes in the various multipath signals such that configuration information may be properly updated. Therefore, the controller updates the configuration information in reference to changes in the received multipath signals.

Regarding claim 12, Subrahmanya discloses the limitations of claim 1 as applied above. Further, Subrahmanya discloses that the processing units each comprise a plurality of configurable correlator resources (fig. 4, refs. 424a, 424b), the plurality of configurable correlator resources configurable in response to the configuration information (para. 0040) to assume a pilot function (para. 0044) or a data function (para. 0043).

Regarding claim 13, Subrahmanya discloses the limitations of claim 12 as applied above. Further, Subrahmanya discloses that the controller generates configuration information in response to a change in received multipath signals as applied to claim 11 above.

Regarding claim 15, Subrahmanya discloses the limitations of claim 1 as applied above. Further, Subrahmanya discloses that the processing units each comprise a plurality of configurable correlator resources (fig. 4, refs. 424a, 424b), the plurality of configurable correlator resources configurable in response to the configuration information (para. 0040) to assume a pilot function (para. 0044) or a data function (para. 0043). Additionally, none of the plurality of correlators are powered down because none of the plurality of correlator resources is without a function.

Regarding claim 26, Subrahmanya discloses the limitations of claim 1 as applied above. Further, Subrahmanya discloses that the receiver section is coupled to a single antenna (fig. 4, ref. 150).

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 3, 5, 8, and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Subrahmanya in view of Honda (US 5970084).

Regarding claim 3, Subrahmanya discloses the limitations of claim 2 as applied above. Subrahmanya discloses that the controller determines which processing unit tracks a particular multipath according to the multipaths determined by a searcher (fig. 4, ref. 412) but does not explicitly disclose that the configuration information includes information as to whether each of the plurality of processing units is powered or is powered down. However, Honda teaches an analogous spread spectrum receiver (abstract) wherein processing units (fig. 1, refs. 4, 9, and 14) are powered or powered down according to the strength of the various multipath signals (col. 3, lines 12-20; col. 4, lines 1-10, lines 20-25). That is, Honda teaches that the fingers which do not contribute an appreciable amount to the power or strength of the received signal are powered down to save energy (i.e. battery life). Therefore, it would have been obvious to one having ordinary skill in the art at the time which the invention was made to utilize

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the controller of Subrahmanya to power down fingers which are superfluous in the reception of a received signal because energy could be saved as taught by Honda.

Regarding claim 5, Subrahmanya discloses the limitations of claim 4 as applied above. Further, Honda teaches that configuration information from the controller may be utilized to power or power down the processing units. Thereby, it follows that the configuration information determines whether one or more of the plurality of configurable correlator resources is powered within a powered processing unit. That is, if the configuration information provides that a particular processing unit is powered down, all of the plurality of configurable correlator resources are powered down (they are all determined to be "off").

Regarding claim 8, Subrahmanya discloses the limitations of claim 4 as applied above. Further, Subrahmanya in view of Honda disclose that the configuration information includes information as to whether each of the plurality of processing units is powered or is powered down and whether each of the plurality of configurable correlator resources within powered processing units is powered as applied to claim 5 above.

Regarding claim 9, Subrahmanya discloses the limitations of claim 4 as applied above. Further, Subrahmanya in view of Honda disclose that the configuration information includes information as to whether each of the plurality of configurable correlator resources is powered or is powered down as applied to claim 3 above.

9. Claims 16-20, 22, 23, 28 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Subrahmanya in view of Oh (US 2001/0048723).

Regarding claim 16, Subrahmanya discloses the limitations of claim 10 as applied above. Subrahmanya does not explicitly disclose an interpolator coupled to the signal acquisition section and receiving a sampled data stream, the interpolator generating an interpolated data stream including data derived from the sampled data stream; and a timing selection circuit identifying one of the values of the interpolated data stream as a representative data sample. However, Oh teaches an exemplary interpolator (fig. 2, ref. 24) that receives data signals from an analog to digital receiver (fig. 2, ref. 22) and restores symbol timing by interpolating an input signal using a timing processor (fig. 2, ref. 25) to correct for frequency and phase distortions (para. 0010). Therefore, it would have been obvious to one having ordinary skill in the art at the time which the invention was made to utilize the interpolator of Oh (fig. 2, ref. 24) to interpolate the output of the signal acquisition section (fig. 4, ref. 152) of Subrahmanya so that the samples are properly digitized in phase and frequency and to utilize the matched filter of Oh (fig. 2, ref. 25) to select one of the values of the interpolated data stream as the representative data sample. In the system of Subrahmanya in view of Oh, as broadly as claimed, the matched filter of Oh (fig. 2, ref. 25) meets the limitations of the timing selection circuit selecting a representative data sample because it outputs the data sample corrected in time by the interpolator.

Regarding claim 17, Subrahmanya in view of Oh disclose the limitations of claim 16 as applied above. Further, Subrahmanya discloses that the signal acquisition section (fig. 4, ref. 152) comprises an analog to digital converter (para 0039) that generates the sampled or digitized data stream. Subrahmanya does not explicitly

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disclose that the analog to digital converter is free running, but it is implied that the digital to analog converter is free running because, as known to one having skill in the art, a free running analog to digital converter is the easiest implementation of a digital to analog converter and no reference to any feedback or variable conversion are provided by Subrahmanya.

Regarding claim 18, Subrahmanya in view of Oh disclose the limitations of claim 17 as applied above. Further, Subrahmanya discloses a frequency correction circuit (fig. 4, ref. 430) coupled to the interpolator and coupled to adjust a digital frequency (para. 0047) outside of the signal acquisition section (fig. 4, ref. 152).

Regarding claim 19, Subrahmanya in view of Oh disclose the limitations of claim 16 as applied above. Subrahmanya further discloses a frequency correction circuit (fig. 4, ref. 430) coupled to the interpolator and coupled to a multiplier, the multiplier receiving a digital signal and outputting the sampled data stream derotated by a signal responsive to a signal generated by the frequency correction circuit (para. 0041).

Regarding claim 20, Subrahmanya in view of Oh disclose the limitations of claim 16 as applied above. Further, Oh discloses that the interpolated data stream includes the sampled data stream and additional data points representing intervals between sampling times of the sampled data stream (para. 0010).

Regarding claim 22, Subrahmanya discloses the limitations of claim 10 as applied above. Further, Subrahmanya in view of Oh disclose the receiver section of claim 10, further comprising: an interpolator coupled to the signal acquisition section and receiving a sampled data stream, the interpolator generating an interpolated data

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stream including data derived from the sampled data stream as applied to claim 16 above. Further, Subrahmanya discloses a data bus receiving the interpolated data stream from the interpolator and providing the interpolated data stream to one of the processing units (fig. 4).

Regarding claim 23 Subrahmanya in view of Oh disclose the limitations of claim 22 as applied above. Further, Subrahmanya discloses a control bus distinct from the data bus, the controller coupled to the processing units by the control bus so that the configuration information passes over the control bus (fig. 4).

Regarding claim 28, Subrahmanya in view of Oh disclose the limitations of the claim as applied to claims 1 and 16 above.

Regarding claim 29, Subrahmanya in view of Oh disclose the limitations of claim 28 as applied above. Further, Oh discloses the additional limitations of the claim as applied to claim 20 above.

10. Claims 24 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Subrahmanya in view of Guey (US 2002/0106008).

Regarding claim 24, Subrahmanya discloses the limitations of claim 1 as applied above. Subrahmanya does not explicitly disclose that the receiver section is in a base station. However, Guey discloses a rake receiver utilized in a mobile handset (fig. 1, ref. 100, para. 0003). Guey teaches that a rake receiver is particularly useful in a mobile handset because there is no direct line of sight between the mobile unit and the base station (fig. 1, ref. 12). Therefore, it would have been obvious to one having ordinary skill in the art at the time which the invention was made to utilize the receiver of

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Subrahmanya in the mobile handset as taught by Guey because it could help to resolve the various multipaths that typically exist between base stations and mobile receivers. Further, for the same reasons, it would have been obvious to one having ordinary skill in the art to utilize the receiver of Subrahmanya in the base station of Guey because it could help to resolve the various multipaths that typically exist between base stations and mobile receivers.

Regarding claim 25, Subrahmanya discloses the limitations of claim 1 as applied above. Further, Subrahmanya in view of Guey disclose the receiver of Subrahmanya utilized in the mobile handset of Guey as applied in claim 24 above.

11. Claim 27 is rejected under 35 U.S.C. 103(a) as being unpatentable over Subrahmanya in view of Sudo et al (US 6625202; hereafter "Sudo").

Regarding claim 27, Subrahmanya discloses the limitations of claim 1 as applied above. Subrahmanya does not explicitly disclose that the receiver section is coupled to plural antennas. However, Sudo teaches a rake receiver using plural antennas so that the cross-correlation between received waves is small and are delayed to prevent interference (abstract). Therefore, it would have been obvious to one having ordinary skill in the art at the time which the invention was made to utilize plural antennas as taught by Sudo in the system of Subrahmanya because it would further the reception of signals.

12. Claims 30-37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Subrahmanya in view of Oh, and in further view of Butler et al (US 2002/0131479; hereafter "Butler").

Regarding claim 30, Subrahmanya in view of Oh disclose the limitations of the claim as applied to claim 16 above. Subrahmanya in view of Oh disclose a signal acquisition section coupled to an interpolator. Subrahmanya in view of Oh do not explicitly disclose that the signal acquisition section outputs a sampled data stream at a first oversampled data rate and the interpolator generates an interpolated data stream at a second oversampled data rate greater than the first oversampled first data rate. As understood by one having skill in the art, the interpolator increases the sampling rate of the analog to digital converter to provide a sufficient sample rate for reproduction of the received signal. Butler teaches, in a rake receiver system, that the sample rate may advantageously be as high as 2x, 4x, or 8x the chip rate (para. 0097). One skilled in the art is aware that a higher sampling rate would assist in the accurate reception of signals. Butler further teaches that the oversampling may be achieved by multiple analog to digital converters or by decimation or rate conversion (interpolation). Therefore, it would have been obvious to one having ordinary skill in the art at the time which the invention was made to utilize an interpolator as described by Oh having an oversampling rate which is 2x, 4x or 8x the chip rate recovered by the analog to digital converter as taught by Butler because the higher chip rate signals could advantageously provide additional data samples for an accurate recovery of the received signals.

Regarding claim 31 Subrahmanya in view of Oh, and in further view of Butler disclose the limitations of claim 30 as applied above. Further, in the system of Subrahmanya in view of Oh, and in further view of Butler, the interpolated data stream

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includes the sampled data stream and data derived from the sampled data stream because the interpolated data rate is at least 2x the chip rate provided by the digital to analog converter as taught by Butler.

Regarding claim 32 Subrahmanya in view of Oh, and in further view of Butler disclose the limitations of claim 31 as applied above. Further, Subrahmanya discloses that the signal acquisition section (fig. 4, ref. 152) comprises an analog to digital converter (para. 0039) that generates the sampled or digitized data stream at the first sampling rate.

Regarding claims 33-35, Subrahmanya in view of Oh, and in further view of Butler disclose the limitations of claim 32 as applied above. Further, in the system of Subrahmanya in view of Oh, and in further view of Butler, the second oversampled data rate is at least two, four and eight times the chip rate of the analog to digital converter because it is either 2x, 4x, or 8x the chip rate as taught by Butler (para. 0097).

Regarding claim 36, Subrahmanya in view of Oh, and in further view of Butler disclose the limitations of the claim as applied to claims 16, 18, 19 and 30 above.

Regarding claim 37, Subrahmanya in view of Oh, and in further view of Butler disclose the limitations of claim 36 as applied above. Further, in the system of Subrahmanya in view of Oh, and in further view of Butler, that the frequency detector determines a timing offset from the interpolated data stream (para. 0047).

Allowable Subject Matter

13. Claims 14 and 21 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

14. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The following prior art of record not relied upon above is cited to further show the state of the art with respect to rake receivers.

U.S. Pub. No. 2001/0014114 to Baltersee et al.

U.S. Pub No. 2002/0127983 to Black et al.

U.S. Pub. No. 2003/0067898 to Challa et al.

U.S. Pub. No. 2003/0086481 to Shi et al.

U.S. Pub. No. 2003/0142734 to Black et al.

U.S. Pat. No. 6600907 to Taguchi.

U.S. Pat. No. 6608858 to Sih et al.

U.S. Pat. No. 6680727 to Butler et al.

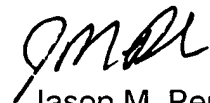
15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jason M. Perilla whose telephone number is (571) 272-3055. The examiner can normally be reached on M-F 8-5 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vanderpuye Kenneth can be reached on (571) 272-3078. The fax phone

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number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Jason M. Perilla
July 11, 2005

jmp


CHIEH M. FAN
PRIMARY EXAMINER